SOIL CONSERVATION SERVICE

WEST VIRGINIA

ENGINEERING STANDARD

DAM, MULTIPLE-PURPOSE (No. and Ac. Ft)

Definition

A dam constructed across a stream or natural watercourse that has a designed reservoir storage capacity for two or more purposes, such as floodwater retardation and irrigation water supply, municipal water supply, and recreation.

Scope

This standard applies to dams which have separate storage allocations for two or more purposes. (Sediment storage is not considered a separate purpose except as indicated under WV Engineering Standard 350, Sediment Basins.

Purpose

A multiple-purpose dam must provide distinct and specific storage allocations for two or more of the following purposes: (1) floodwater retardation, (2) irrigation, (3) fishing, hunting. boating, swimming or other recreational use. (4) improved environment or habitat for fish or wildlife, (5) municipal. (6) industrial, and (7) other uses. (A reservoir for which multiple use is made of the same storage allocation is not considered a multiple-purpose dam. However, a dam designed for joint-use storage is a multiple-purpose dam.)

Conditions Where Practice Applies

This practice applies only to sites meeting all the following criteria:

1. Topographic, geologic, hydrologic and soil conditions at the proposed site are satisfactory for the development of a feasible dam and reservoir.

2. The sediment yield from the watershed is not excessive.

3. Water is available from a single or combined source of surface runoff, base flow, or from subsurface storage in sufficient quantity and adequate quality to satisfy the intended purposes.

All federal, state, and local laws, rules, and regulations governing water use, pollution abatement, health, and safety shall be adhered to. The owner or operator shall be responsible for securing all required permits or approvals and for performing in accordance with such laws and regulations. scs employees are not to assume responsibility for procuring these permits, rights, or approvals or for enforcing laws and regulations. They may provide the landowner or operator with technical information needed to obtain the required rights, or approvals to construct, operate and maintain the practice.

Permits may be required from the following agencies:

1. U.S. Army Corps of Engineers
2. West Virginia Department of Natural Resources
3. West Virginia Public Lands Corporation

Design Criteria

General

All dams designed under this standard shall meet or exceed criteria as called for in WV Engineering Standard for Pond, (378) or in TR-60, as appropriate.

Floodwater Retarding Pool and Spillway Requirements

Dams with a floodwater retarding purpose shall meet or exceed the principal spillway and emergency spillway requirements of WV Engineering Standard for Dam, Floodwater Retarding (402).

Outlet Works

Outlet works discharging releases for several purposes shall have adequate capacity to carry the peak flow resulting from the combined demands at any time. Outlet conduits and appurtenances shall be designed to criteria that are equal to or better than that called for in WV Engineering Standard for Pond, (378), or TR-60, as appropriate.

Storage Requirements

The usable storage capacity shall be adequate for all purposes, considering seasonal variations in demand and the expected losses from seepage and evaporation.

Sediment Storage

Capacity in addition to that required for all other purposes must be provided to offset depletion by sediment accumulation for a period equal to the design life. When provisions are made for intermediate cleanout of sediment, the sediment storage capacity will be equal to the accumulation expected between scheduled removals. Procedures contained in NEH-3, Chapter 8 will be used to determine sediment yield.

Type of Structures

All dams and appurtenances shall be designed to meet applicable SCS standards for the type and class of structure involved.